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STUDIES OF PERUVIAN BIRDS. NO. XXVII[1]

NOTES ON THE GENERA *MUSCIVORA*, *TYRANNUS*, *EMPIDONOMUS*, AND *SIRYSTES*, WITH FURTHER NOTES ON *KNIPOLEGUS*

BY JOHN T. ZIMMER

I am greatly indebted to Messrs. C. C. Gregg and Rudyerd Boulton of Field Museum of Natural History, Chicago, for the loan of certain critical specimens used in the following study.

Names of colors are capitalized when direct comparison has been made with Ridgway's 'Color Standards and Color Nomenclature.'

Muscivora tyrannus tyrannus (Linnaeus)

(*Muscicapa*) *Tyrannus* LINNAEUS, 1766, 'Syst. Nat.,' ed. 12, I, p. 325—based on *Tyrannus cauda bifurca* BRISSON, 'Orn.,' II, p. 395, Pl. XXXIX, fig. 3—"Canada" (error) and Cayenne; Linnaeus gives Canada and Surinam; type locality hereby restricted to Surinam.

Tyrannus savana VIEILLOT, 1807, 'Hist. Ois. Amér. Sept.,' I, p. 72, Pl. XLIII—new name for *Muscicapa tyrannus* LINNAEUS.

Muscicapa phaenoleuca VIEILLOT, 1818, 'Nouv. Dict. Hist. Nat.,' nouv. éd., XXI, p. 448—based on AZARA, No. 192; Paraguay (= juv.).

Tyrannus violentus VIEILLOT, 1818, *t. c.*, p. 89, based on AZARA, No. 190—Buenos Aires, Montevideo, and Paraguay.

Tyrannus milvulus NUTTALL, 1840, 'Man. Orn. U. S. and Canada,' ed. 2, p. 307—new name for *Muscicapa tyrannus* LINNAEUS.

It has long been the accepted belief that there is but a single form of this species inhabiting the extensive range from Mexico to Patagonia, recently extended to the Falkland Islands. The material examined in the present study tends to disprove this belief and to show that there are some four well-marked forms inhabiting quite distinct areas although one of these forms, being migratory at a certain season, invades parts of the ranges of the other three forms. For one of these forms there is an available name; two forms have proved to be unnamed and are described below.

Linnaeus based his name, *tyrannus*, on birds described by Brisson, supposedly from Canada and Cayenne. The locality, "Canada," is

[1] Previous papers in this series comprise American Museum Novitates, Nos. 500, 509, 523, 524, 538, 545, 558, 584, 646, 647, 668, 703, 728, 753, 756, 757, 785, 819, 860, 861, 862, 889, 893, 894, 917, and 930.

obviously an error (possibly for Grenada?) and I can find no definite records from Cayenne which justify Brisson's other citation, although there is probability that the bird occurs there at certain seasons. On the other hand, Linnaeus also cites "Canada" but, instead of "Cayenne," gives the range as Surinam. Since there are various records from Surinam, I have chosen it for restricted type locality, even though it is only the winter home of one form of the species, far removed from the breeding range. For the reason, also, that there is a slight possibility that one of the other forms may reach this country, although I have no evidence of its doing so, I find it advisable to characterize the form to which I apply the name given by Linnaeus, basing the description on specimens collected in Surinam.

Whole top of head steely blue-black, with a concealed crest of Lemon Chrome, deepening to Light Cadmium in the center and paling to white on forehead, sides of crown, and occiput; back Light Neutral Gray, with a slight olivaceous tinge; lower rump sooty, with grayish edges, rather broad on the upper feathers of this area; upper tail-coverts glossy black. Under parts white except for a small grayish area on the extreme sides of the breast, a gray or drab-gray stripe along the dorsal margin of the femoral area, and a dark patch on the under wing-coverts near the base of the primaries (the patch on the sides of the breast is moderately diagnostic). Remiges brownish fuscous; outer primary with narrow but sharp outer margin yellowish white; remaining remiges narrowly margined exteriorly with grayish white, strongest and whitest on the longest tertial; greater and median upper wing-coverts brownish fuscous with narrow grayish margins; lesser series rather broadly tipped with the gray of the back; inner margins of remiges indistinctly whitish. Tail long and forficate; blackish, with outer web of outer rectrices pale yellowish for about half the length of the feather. Adult males with three outer remiges very narrowly emarginate at tips of inner webs (the outermost averaging about 1.75 mm. wide; the second, 2; the third, 2.5), with the narrowed portion separated from the wider part by an abrupt, basad-directed notch about 3 mm. deep; length of narrowed portion about 10–12 mm.; fourth rectrix distinctly but less abruptly narrowed, without a notch. Females without strongly emarginate remiges but with emarginations sometimes suggested, without notches; outer rectrices less elongate but tail still strongly forficate and similarly marked to that of the male. Young birds with head brown instead of black, somewhat darker on the sides and without concealed patch or with a simple whitish one; back brownish gray; rump

brown, with lighter brown tips; upper tail-coverts darker brown, with warmer brown tips. Remiges brown, with external margins buffy whitish; upper wing-coverts brownish, with cinnamomeous or whitish edges. Under parts of body much as in the adults. Tail brownish, forked, with outer rectrices similarly marked to the adult; remainder with rufescent brown tips and margins.

The distinguishing characteristics of this form are found in the dark coloration of the mantle, the relatively prominent grayish patch at the sides of the breast, and the presence, in the male sex, of three sharply notched primaries with extremely narrow tips and a somewhat emarginate fourth primary.

Two hundred and seventeen specimens at hand may be referred to this form. They come from various localities ranging from Argentina to Dutch Guiana, Trinidad and Tobago, the Mérida region, the upper Orinoco, Cassiquiare, Santa Marta and Bogotá regions, and northern Perú and various localities between. Birds with enlarged gonads are from Argentina, Paraguay, and Rio Grande do Sul, and the only specimens from these areas were collected from October to February. On the other hand, north of this area, from the Matto Grosso Plateau to northern South America, the dates are all from February to November, most of them from March or April to October, and none of the specimens are noted as having enlarged gonads. A résumé of the evidence secured from this material indicates that the birds breed in the neighborhood of Argentina and Paraguay in the summer, from November to January, in a rather worn condition of plumage. Young birds are well grown in December and January, and the population migrates to the northward, probably beginning in January and continuing through February. This migration carries some individuals as far north as the Caribbean coast, and outlying islands and (presumably this form) sometimes as far as Cuba, Bermuda, and the eastern United States.

A complete molt may start as early as February and is continued in both adults and young to as late as July. Some birds are in completely fresh plumage in July; all examples from August on are comparatively fresh, with molt completed. The southward movement appears to be in full swing from the northernmost localities in September and October; my latest specimens are two birds from near Mérida dated October 13, but Chubb records a specimen from British Guiana dated in November. I have a specimen from Pará, taken in November, and another from Orosa, Perú, also collected in November.

The exact status of the bird on the east-Brazilian coast is not cer-

tain. There is no hesitation in the assignment of the specimens from this region to typical *tyrannus*, with which they agree in all observed details, including the chronology of plumages. Several specimens from Rio Grande do Sul are noted as with enlarged gonads, and the bird is probably a breeding form in that state. Pinto reports the arrival of the species in São Paulo in October and in Goyaz in August, but gives no indication of possible breeding records. Our specimens from Minas Geraës were taken in September. Bahian birds are dated February, April, and September, with an April bird having the gonads slightly enlarged. Pinto, however, does not list the species in his account of the birds of Bahia, and I doubt if it is a breeding resident in that state. Nowhere in the tropics does it appear to have been found nesting, and the northern limit of the breeding range probably is south of the Tropic of Capricorn.

Beebe (1925, Zoologica, VI, p. 156) records the species as found breeding at Kartabo, British Guiana, in March, but I feel sure that there is some error in this statement. All other available evidence indicates that the bird visits the coast of British Guiana only as a migrant or winter visitor. One of the other subspecies (cf. account of *M. t. monachus*) may reach the highlands of the interior and may be found to breed there but this suggestion has yet to be confirmed.

The amount of yellowish and greenish suffusion in certain parts of the plumage is highly variable. Some birds are very decidedly greenish on the back, and most of the fresh specimens show some yellow tinge on the under wing-coverts. The most pronounced example is a male from Pará which has the whole under surface below the throat definitely pale, greenish yellow instead of white.

The only Peruvian specimens at hand are from Orosa (November) and Sarayacu (March). The Orosa bird is an adult male in moderately fresh plumage; the Sarayacu birds are molting females, one adult, in ragged condition, the other immature.

Other records are from Pebas and Iquitos.

The various synonyms listed at the head of this section appear to be referable to typical *tyrannus*. There is, in addition, one name, based on a Guatemalan bird, which is available for one of the other separable forms, next to be discussed.

Muscivora tyrannus monachus (Hartlaub)

Tyrannus (*Milvulus*) *monachus* Hartlaub, 1844, Rev. Zool., VII, p. 214—Guatemala (= juv.).

The Swallow-tailed Flycatchers of the whole of Central America are quite readily separated from typical *tyrannus* by their much paler gray back, with an even paler and more whitish collar suggested in most cases. The sides of the breast are often as white as the center and never so strongly grayish as they sometimes are in *tyrannus*. Furthermore, the adult males have the tips of the outer primaries emarginate in a very different manner. The outermost is deeply notched and abruptly narrowed to a width of 1.5 or 2 mm.; the second also deeply notched and narrowed to a width of 2.5 mm.; the third is narrowed to no less than 4 or 5 mm., often without a notch, sometimes with a slight notch much less developed than in the other two feathers. The length of the narrowed portion of these feathers is about 10 to 12 mm., about as in *tyrannus*. The fourth remex usually is not at all emarginate. Adult females may have a slight emargination near the tips of one or two outer primaries.

Except for the Santa Marta region, the resident form of Colombia is *monachus*. One "Bogotá" skin belongs to *tyrannus*, as noted on an earlier page. There is a breeding record from the Antioquia region by Salmon (I do not have the date) and Goodfellow has reported that at Popayan, in June, these flycatchers were assembling in large flocks, so it may be presumed that, at least in parts of Colombia, the form breeds in the early part of the year. The condition of the plumage of some of the specimens at hand bears out this assumption, although there is a little indication that the season may vary in different localities. More material will be necessary to determine the point. There is a record from Costa Rica of nesting in May, and April skins from that country are sometimes marked as having enlarged gonads.

Leaving Central America and Colombia where *monachus* is known to breed, we find specimens referable to this form from Lagunillas, near Mérida, Venezuela; from Altagracia, Suapure, Ayacucho, and Maripa, on the Orinoco; from San Antonio, Bermúdez, northern Venezuela; from Limão, Rio Cotinga; Frechal, Rio Surumú; Caracarahy, Rio Branco; and Campos Salles, Manaos, Brazil. Birds in immature plumage from these localities were taken in June and July; young birds collected in August are molting into adult dress. September adults are just completing their molt and are very fresh; December birds are more worn; February and April, very worn; June and July show the first signs of molt. Costa Rican birds of late May and June show the first signs of molt in that region, corresponding fairly well with the South American examples of *monachus*.

Nevertheless, with only the seasonal condition of the plumages on which to base conclusions, I am unable to determine whether *monachus* breeds in Venezuela and northern Brazil or whether it is simply a visitor to this region. I suspect that it may breed in suitable open country in various parts of this area although it may extend its visitations some what beyond the limits of its breeding range, not, however, from points as far distant as Colombia where it remains at the same season as it is found in Venezuela and Brazil. It is interesting, in this connection, to note that of a number of specimens from the Mérida region, collected by Briceño, all but one example of *tyrannus* are labeled as migrants while the skins of *monachus* have no such notation. I have specimens, from Venezuela and northern Brazil taken in every month but March, May, and October, although none of them has any notation as to the condition of the gonads.

It is curious that the collection at hand has few specimens showing the occurrence of both *tyrannus* and *monachus* in the same localities. In the Orinoco region, *tyrannus* is represented from Maipures and Ciudad Bolívar; *monachus* from Maripa, Altagracia, Suapure, and Ayacucho. On the northern coast of Venezuela, *tyrannus* is at hand from Cristóbal Colón and Cumaná; *monachus* from San Antonio. In the Mérida region, *tyrannus* is from El Valle, Hechisera, and Mérida; *monachus* from Lagunillas. Both forms are in "Bogotá" Collections and I have both from Caracarahy, Rio Branco, and Campos Salles, Manaos, Brazil.

There have been some suggestions made that the Central American bird is migratory, at least in part, but there is no evidence, of a positive nature, that I have seen. It breeds in Costa Rica in May (Cherrie) and I have specimens from that country taken in April, May, June, September, and December; Nicaragua, January and May; Mexico in January and February; Panamá in February, March, April, September, October, and December. As stated above, Goodfellow (1901, Ibis, p. 708) remarks that at Popayan, Colombia, in June, the species was assembling in large flocks, but no migratory movement is mentioned. It would not be surprising if there were some concentration of individuals in favored localities but it is doubtful if this tropical form has any protracted migration to a distant but equally tropical region, although there is some evidence of such migration in at least one species of the family to be discussed in a later paper of this series.

Further field work is necessary to ascertain the exact status of *monachus* in many parts of its range.

With the exception of a single wintering specimen of *tyrannus* from Cienaga, the available series of birds from the Santa Marta region is quite separable from both *tyrannus* and *monachus*. Since there is no available name for this form, it may be known as follows.

Muscivora tyrannus sanctaemartae, new subspecies

Figure 1

TYPE from Bonda, Santa Marta, Colombia. No. 97,670, American Museum of Natural History. Adult male collected February 4, 1899, by G. H. Hull.

DIAGNOSIS.—Similar to *M. t. monachus* of Central America and most of central and western Colombia in respect to pale coloration of the back, but emargination of the outer primaries quite different. Males with the emarginate tip of the two outer primaries relatively broad and long and without a sharp notch separating it from the remainder of the inner outline of the feather; third primary with terminal emargination shorter, broader, and still less sharply defined. Females with suggestions of notches on the three outer primaries (suggesting the condition in the males of *monachus*), but the emarginate tips short and those on the outer two feathers twice as broad as in the males of *monachus*.

RANGE.—Apparently confined to the Santa Marta region of northern Colombia.

DESCRIPTION OF TYPE.—Whole top and sides of head steely bluish black, including auriculars and nape; center of the cap occupied by a broad, concealed patch of yellow (Lemon Yellow in the deepest hued portion) passing on all sides into pure white, similarly concealed; hind neck somewhat whitish, suggesting a poorly defined collar; upper portion of mantle Pale Gull Gray, passing posteriorly into a slightly darker tone, faintly tinged with Pale Olive Gray; rump and upper tail-coverts rather abruptly blackish, with pale margins, broader and grayer on upper rump and becoming narrower and more brownish on upper tail-coverts, being nearly obsolete on the longest coverts. Entire under parts white except for a dusky patch on the under wing-coverts near the bases of the primaries, and for a grayish dorsal border of the femoral area. Remiges blackish, with a fine yellowish-white margin on outer web of outer primary; distal portion of outer margins of remaining primaries also whitish, decreasing in amount toward inner primaries but tending to round tips; secondaries and tertials with whitish outer margins and tips, longest on longest tertial; upper wing-coverts fuscous, margined with pale gray; lesser coverts with these margins broadest, grading into the uniform gray of the scapulars; inner margins of remiges whitish, poorly defined. Outer two primaries emarginate for about 18 to 20 mm. from tips, narrowed on inner web to an average width of 4 mm. but without a distinct notch at the point of transition; third outer primary slightly emarginate, reduced to about 5 mm., also without a notch. Tail forficate, black, with outer web of outermost rectrix white at base, the pale margins becoming reduced in width distad and disappearing about midway toward the tip. Bill (in dried skin) black; feet dark brown. Wing, 104 mm.; tail, 283; exposed culmen, 14; culmen from base, 19; tarsus, 15.5.

REMARKS.—Female colored like the male; somewhat smaller, especially in length of tail. Wing, at least sometimes, with outermost rectrices narrowed at tip to about the same width as in the male but for

a length of only 10 mm. and with a definite notch on at least the two outer feathers.

Specimens at hand were taken in January, February, May, and September, and Todd records others collected in August. September birds, both adults and young, are molting; January and February birds are fairly fresh. I have no information as to breeding, but analogy with the other forms of the species with reference to the condition of the plumage in the specimens examined places the probable nesting season as April, May, or June.

A single specimen from Cienaga, whence there are five other specimens that are referable to *sanctaemartae*, is a migrant *tyrannus*, readily distinguishable by color as well as by the shape of such of the outer primaries as have appeared in the molt.

One male from Bonda has the narrowed terminal portion of the outer two primaries separated from the wider portion by a rather short but distinct notch, but it is the only male so marked. This character is developed as a constant feature in the birds from a widely separated region, the neighborhood of the Rio Tapajoz, south of the Amazon, in Brazil. Although numerous specimens from the neighborhood of the Rio Tapajoz are clearly wintering individuals of *tyrannus*, there are many specimens in a different state of plumage which are quite readily separable as a distinct form which may be known as follows.

Muscivora tyrannus circumdatus, new subspecies

Figure 1

TYPE from Tauarý, right bank of Rio Tapajoz, Brazil. No. 287,357, American Museum of Natural History. Adult female collected April 18, 1931, by A. M. Olalla.

DIAGNOSIS.—Nearest to *M. t. sanctaemartae*, of the Santa Marta region of Colombia, and averaging as pale gray on the back, but with the concealed patch on the crown averaging deeper yellow; emargination of the outer two primaries of the male different, having a deep notch on the inner margin, about 17 mm. from the tip, abruptly separating the narrowed terminal portion from the broader area posteriad. Females with or without modified terminal emargination.

RANGE.—South bank of the Rio Amazonas, Brazil, from the neighborhood of Villa Bella Imperatríz at least to the right bank of the Tapajoz.

DESCRIPTION OF TYPE.—Top and sides of head steely bluish black; center of cap occupied by a broad concealed patch of Deep Chrome × Light Cadmium, deepest in the median line and replaced on all borders by white; mantle Gull Gray × Light Gull Gray, paler and somewhat whitish anteriorly, suggesting an indistinct collar; posteriorly darker and somewhat tinged with greenish; rump and upper tail-coverts blackish, with pale margins which are broad and grayish on the upper rump, narrower on the lower part, and nearly obsolete on the upper tail-coverts. Entire

under parts white except for a slight grayish upper border on the femoral tract and a dark patch on the under wing-coverts near the base of the primaries. Remiges blackish with a fine, yellowish-white margin on the outer web of the outermost primary; pale margins on remaining primaries and on the secondaries grayer and less sharply defined, but those on the longer tertials whiter and rather well defined; upper wing-coverts fuscous with gray margins; inner margins of remiges yellowish white, at least basally. Outer two primaries abruptly narrowed on the inner webs to a width of 3 mm. by a diagonal notch directed basad, about 3 mm. deep, with the narrowed portion of the feather about 17 mm. in length; third primary less abruptly narrowed to a width of 6 mm., about 18 mm. from the tip of the feather, without a notch. Tail long and forficate, black, with the outer web of the outer feather yellowish white for about half its basal length. Bill (in dried skin) black; feet black. Wing, 110 mm.; tail, 262; exposed culmen, 14.5; culmen from base, 19.5; tarsus, 17.

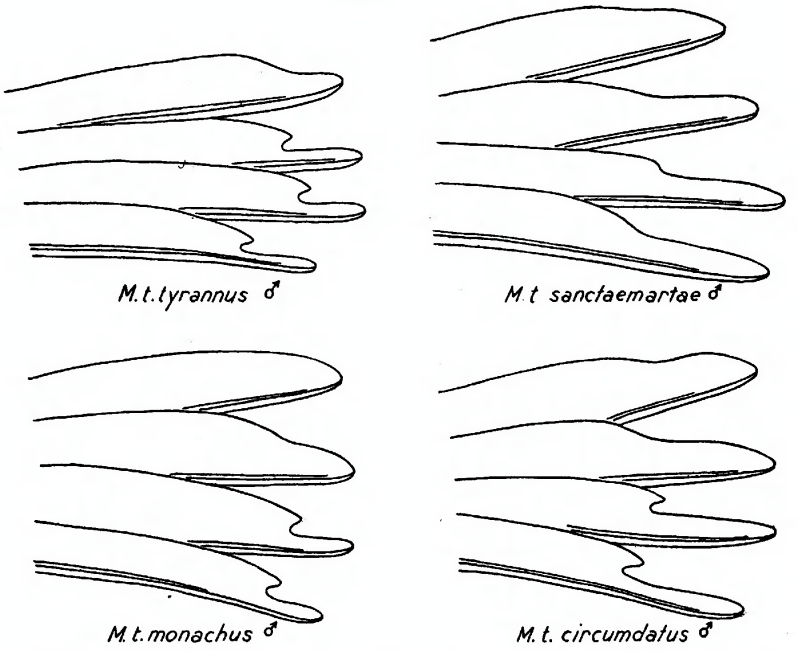

Fig. 1. *Muscivora tyrannus.* Ventral aspects of the outer primaries of the various subspecies.

REMARKS.—Female colored like the male but with tail shorter (less than 200 mm.); outer two primaries sometimes abruptly narrowed to an average width of 4 mm. for a distance of 6 or 7 mm. from the tip, with a slight notch; third very slightly emarginate at tip; sometimes all outer primaries without more than a suggestion of emargination.

I have thirty-eight specimens which show the characters of this form.

The females are not separable from those of *sanctaemartae*, except that the outer margins of the basal half of the outer web of the outermost rectrices often are definitely tinged with yellowish, whereas in *sanctaemartae* they average purer white. The adult males all have the decided notch at the base of the emargination of the outer two primaries which is the principal character of *circumdatus* and which, as noted on an earlier page, is rarely developed in *sanctaemartae*.

The specimens of *circumdatus* show a seasonal condition of plumage different from that of the Santa Marta birds. Specimens collected in February and March are just beginning their molt; June birds are all but completely molted; August skins already show some wear. One April 29 bird is just completing its post-juvenal molt and is in its first adult plumage. As noted above, *sanctaemartae* is in early molt in September, fresh in January, and has the post-juvenal molt in progress also in September. There is no possibility, therefore, that the Tapajoz birds are migrants from the Santa Marta region. The seasonal changes of plumage in *circumdatus* are about as in typical *tyrannus* and the breeding season of this form, therefore, should be about from November to January, when *tyrannus* is absent from the Amazonian region. Breeding records, however, have yet to be established.

There is one specimen, labeled "Espirito Santo, J. B. Steere," which has yet to be authenticated as to locality. It definitely belongs to *circumdatus* and agrees with August skins in regard to the condition of plumage.

Specimens Examined

M. t. tyrannus.—Argentina: La Soledad, 1 ♂, 1 ♀; Salto, 1 ♂; Esperanza, 1 ♂; Est. San Martino, Pr. Buenos Aires, 2 ♂, 1 ♀; Bahia Blanca, 1 ♀; Barracas al Sud, 1 ♂, 1 ♀; Buenos Aires, 1 ♀; Rivadavia, 2 ♂; "Choinbuco," 1 ♂; Perico, Jujuy, 1 ♀; Rosario de Lerma, 7 ♂; Tucumán, 1 ♂; Embarcación, 1 ♂, 1 ♀; La Plata, 1 ♂. Uruguay: Paysandu, 1 ♂. Paraguay: Colonia Risso, 1 ♂; Fort Wheeler, 1 ♂; east of Villa Rica, 2 ♂, 1 ♀; Zanja Moroti, 1 ♂, 1 ♀; east of Caaguassú, 3 ♂; opposite Concepción, 1 ♂; "Paraguay," 3 ♂. Bolivia: Todos Santos, 1 ♂, 1 (?); Prov. del Sara, 1 ♂, 1 ♀; Falls of Río Madeira, 1 ♂. Brazil: Rio Grande do Sul, (various localities), 12 ♂, 8 ♀, 2 (?); Paraná, Tibagy, 1 ♂, 2(?); Minas Geraës, Agua Suja, 1 ♂; "Rio de Janeiro," 1 [♂]; Bahia, Remanso, 3 ♂, 3 ♀, 3 (?); São Paulo, Victoria, 4 ♂; Fazenda Cayoá, 1 ♀; Matto Grosso, Chapada, 4 ♂, 4 ♀; Pará, 1 ♂; Rio Tapajoz, Santarem, 2 (?); Urucuritiba, 2 ♀; Igarapé Brabo, 2 ♀; Igarapé Amorin, 1 ♂; Tauarý, 2 ♀, 1 (?); Caxiricatuba, 1 ♀; Aramanay, 1 ♂, 1 ♀; Villa Bella Imperatríz (Santa Clara), 1 ♀; Rio Madeira, Santo Antonio de Guajará, 1 ♂; Calamá, 1 ♂, 3 ♀; Humaythá, 1 ♂; Rio Amazonas, Teffé, 1 ♂; Rio Jamundá, Faro, 10 ♂, 7 ♀; Rio Negro, Flores, Manaos, 2 ♂; Campos Salles, Manaos, 7 ♂, 13 ♀; Tabocal, 1 ♂; Yucabí, 2 ♂, 4 ♀; Mt. Cury-

curyari, 2 ♂, 1 ♀; Santa Maria, 1 ♂; Camanaos, 1 ♂; Igarapé Cacao Pereira, 1 ♀; São Gabriel, 1 ♂, 3 ♀; Muirapinima, 1 ♂; Hacienda Rio Negro, Manaos, 2 ♂; Rio Branco, Caracarahy, 1 ♂; "Brazil," 1 ♂. PERÚ: Orosa, 1 ♂; Sarayacu, 2 ♀. VENEZUELA: Río Cassiquiare, Solano, 1 ♂; El Merey, 1 ♂; Mouth of Río Ocamo, 4 ♀, opposite mouth of Ocamo, 1 ♀; Río Huaynía, junction of Cassiquiare, 1 ♂, 1 (?); Río Caura, mouth of Río Chanaro, 1 ♀; Maipures, 1 ♀; Ciudad Bolívar, 2 ♂, 3 ♀; Mérida, 6 ♂, 2 ♀; El Valle, 1 (?); Hechisera, 1 (?); Cumaná, 1 ♀; Cristóbal Colón, 1 ♂, 1 ♀. TRINIDAD: Caroni, 1 ♂. TOBAGO: 1 ♂. DUTCH GUIANA: near Paramaribo, 1 ♂, 2 ♀. COLOMBIA: "Bogotá," 1 ♂; Cienaga, Santa Marta, 1 ♂. "SOUTH AMERICA," 1 ♂.

M. t. circumdatus.—BRAZIL: Rio Tapajoz, Santarem, 1 ♂; Urucuritiba, 1 ♀; Igarapé Brabo, 5 ♂, 1 ♀; Tauarý, 5 ♂ (incl. type), 3 ♀; Rio Amazonas, Villa Bella Imperatríz (Santa Clara), 6 ♂, 6 ♀; "Brazil," 1 ♂; "Espirito Santo" [?], 1 ♂; (no locality), 2 ♂.

M. t. sanctaemartae.—COLOMBIA: Santa Marta, Bonda, 4 ♂ (incl. type), 3 ♀; Valparaiso, 1 ♂; Cienaga, 3 ♂, 1 ♀, 1 (?).

M. t. monachus.—MEXICO: Tlacotalpan, 1 ♂, 2 ♀; San Juan Bautista, Tobasco, 1 ♂. GUATEMALA: Antigua, 1 ♂; Vera Paz, 1 ♂. HONDURAS: Agua Azul, 1 ♀. NICARAGUA: Saklin, 1 ♂, 1 ♀; Jalapa, 1 ♂, 1 ♀. COSTA RICA: Miravalles, 1 ♂; San José, 3 ♂, 3 ♀; Agua Caliente, 9 ♂, 5 ♀; Aquinares, 2 ♂, 1 ♀; Buenos Aires, 3 ♂, 4 ♀; Cartago, 1 ♂, 1 ♀. PANAMÁ: Santiago, 3 ♂, 2 ♀; Agua Dulce, 1 ♀; Chiriquí, 1 ♂, 1 (?); [Lion Hill], 1 ♂, 1 ♀; Savanna near Panamá, 1 ♂; Boquete, 2 ♂, 1 ♀. COLOMBIA: Cali, 4 ♂, 2 ♀; Palmira, 1 ♂; Chicoral, 1 ♀; Barro Blanco, 2 ♂, 1 ♀; Turbaco, 1 "♂"; near Medellin, 1 (?); Santo Domingo, 1 ♀; Popayan, 1 ♂; "Bogotá," 3 [♂], 2 [♀], 1 (?). VENEZUELA: Altagracia, 4 ♂, 1 ♀; Suapure, 1 ♂; Ayacucho, 1 ♂; Maripa, 2 ♂, 1 ♀; Lagunillas, 1 ♂, 1 (?); San Antonio, Bermúdez, 2 ♂. BRAZIL: Rio Cotinga, Limão, 1 ♀; Rio Surumú, 2 ♂; Rio Branco, Caracarahy, 1 ♀; Rio Negro, Campos Salles, Manaos, 1 ♂.

Tyrannus tyrannus (Linnaeus)

Lanius tyrannus LINNAEUS, 1758, 'Syst. Nat.,' ed. 10, I, p. 94—based on *Muscicapa corona rubra* CATESBY, 'Nat. Hist. Carolina,' I, p. 55, Pl. LV; Carolina.

Sarayacu, 2 ♂; Santa Rosa, Río Ucayali, 13 ♂, 5 ♀; mouth of Río Urubamba, 3 ♂, 2 ♀.

These specimens, of course, are winter visitants from North America. They are interesting chiefly for the light which they throw on the molt of this species. Fifty-five other specimens from various parts of the winter range in Central and South America have been studied in the same connection, and the result of the study points to certain rather definite conclusions.

As pointed out by Dwight (1900, Ann. N. Y. Acad. Sci., XIII, p. 140) there are the first signs of post-nuptial molt before the species leaves for the south in August, but these are very slight, sometimes only noticeable on the top of the head. Some September specimens from the tropics show little more evidence than this, although other Sep-

tember birds may have the head well advanced and the body molt in progress. In September, also, the young of the year show the first signs of change on the head. If the molt has not advanced very far, the old plumage of the adults may be badly abraded by this time, although the young birds, having worn their plumage for a shorter time, are relatively fresher than the adults. In October, the body molt may be well advanced or, if not, the old plumage, including the flight-feathers (in spite of Dwight's assertion that these are subject to little wear) is in rags; the young birds also show the effects of wear by this time. In November, the body molt is usually well advanced in adults, although sometimes it is not, while the immature birds, if they have not started before, are commencing this change. In rare instances, the wing shows signs of molt on secondaries and tertials. In December, the wing is at least started and there may be signs of molt in the tail, although a young bird from Bolivia is just getting the head, body, and wing started. I have no January or February specimens, but numerous March skins show, variously, the head, body, and wings well advanced and the tail in progress, all areas advanced, or the molt apparently complete. All April and May specimens are in fine, fresh plumage, ready for the ensuing breeding season. Apparently, therefore, almost the entire season of absence from the breeding range is occupied in a protracted molt which may begin just before the fall migration, in the case of the adults, or soon after reaching winter quarters, in the case of the young birds, although it may be somewhat delayed. There is no evidence, in the material examined, of a possible second molt, suggested by Dwight as a possibility. The time occupied by the single annual molt is too extended to leave room for a second change other than the casual replacement of lost feathers.

I am hesitant about the recognition of a subspecies, *hespericola* [Oberholser, 1932, Sci. Publ. Cleveland Mus., IV (1), p. 3—Mouth of Twenty Mile Creek, Warner Valley, Oregon], described as larger than *tyrannus*, with lighter upper surface and longer white tip to the tail. I have seen no topotypes but have two winter birds from Panamá, identified as this form by the author of it. In general, western birds are slightly larger than eastern ones and may be slightly paler in dorsal coloration, but the overlap appears to be too large to warrant separation. The great abrasion of the plumage in winter birds, except just before the northward movement, makes the recognition of any such forms at this season a matter of problematical accuracy. Some of the Peruvian skins at hand are quite large, but they can be matched in certain specimens from the

eastern part of the United States although they come within the range of measurements given for the Oregon form. Until the status of "*hespericola*" is determined by a detailed study of the birds of the entire western part of the United States and the limits of its variations and range ascertained, it would be futile to attempt to identify the wintering specimens from South America.

Other Peruvian records are from Lima, Nauta, and Yurimaguas.

SPECIMENS EXAMINED

M. tyrannus.—PERÚ: 25. BOLIVIA: 8. ECUADOR: 6. COLOMBIA: 12. PANAMÁ: 19. COSTA RICA: 1. NICARAGUA: 4. GUATEMALA: 4. VENEZUELA: 1. UNITED STATES and CANADA: 171.

Tyrannus albogularis Burmeister

Tyrannus albogularis BURMEISTER, 1856, 'Syst. Übers. Th. Bras.,' II, p. 645—Bahia and Pernambuco, Brazil; Halle Mus.

I have sixty specimens of this species before me from numerous localities, some of which extend the range far beyond its previously known limits. The most distant of the localities is Sarayacu, Perú, whence I have five skins, representing the first records from this country. Thus far there have appeared no records to comfirm Burmeister's citation of Bahia and Pernambuco but there are records from the states of Minas Geraës and Goyaz which make Bahia not too great an impossibility. Hence I leave Burmeister's citation uncriticized although it is in need of confirmation.

I can find no subspecific differences in the material examined. Young birds differ from adults by lacking the red crown-patch (sometimes suggested by a small whitish area); by having the pale margins of the wings and upper wing-coverts buffy or cinnamon; by having the upper tail-coverts margined with dull rufous and the rectrices (except the outermost) similarly rufous-edged; by having a brownish tinge on the tips of the under tail-coverts; and sometimes by having the lower belly and under tail-coverts largely whitish instead of yellow.

March and April birds are very worn and in an early stage of complete molt; August and September specimens are quite fresh or just completing the molt. None of the specimens has indication of enlarged gonads.

SPECIMENS EXAMINED

T. albogularis.—BRAZIL: Matto Grosso, Chapada, 6 ♂, 8 ♀; Rio Tapajoz, Santarem, 1 ♂; Tauarý, 1 ♀; Aramanay, 1 ♂, 2 ♀; Rio Amazonas, Villa Bella Imperatríz, 3 ♂, 3 ♀; Rio Madeira, Rosarinho, 2 ♂, 1 ♀; Santo Antonio de Gua-

jará, 6 ♂, 11 ♀; Teffé, 2 ♂, 2 ♀; Rio Negro, Campos Salles, Manaos, 2 ♂, 1 ♀; Hacienda Rio Negro, 1 ♂; Igarapé Cacao Pereira, 1 ♀. PERÚ: Sarayacu, 4 ♂, 1 ♀.

Tyrannus melancholicus melancholicus Vieillot

Tyrannus melancholicus VIEILLOT, 1819, 'Nouv. Dict. Hist. Nat.,' nouv. éd., XXXV, p. 48—based on AZARA, No. 198; Paraguay.

Muscicapa furcata SPIX, 1825, 'Av. Bras.,' II, p. 15, Pl. XIX—"in locis campestribus Brasiliae" (probably somewhere in São Paulo or Rio de Janeiro; Hellmayr); Munich Mus.

Tyrannus roseus LESSON, 1831, 'Traité d'Orn.,' p. 382—no locality = southern Brazil; Paris Mus.

This species is exceedingly unsatisfactory taxonomically. There is a great deal of individual variation in different directions with a concentration of certain averages of different sorts in certain geographical areas without very clear distinctions. It would be possible to describe and name at least five new subspecies, each with a certain combination of characters not possessed by the others although most of them would represent populations intermediate between better marked extremes. One of them appears to represent a new extreme to which I have given a name in the following pages; the others I have discussed in general terms without applying separate nomenclature. A very special study must be made before any further lines of demarcation can be established. With some seven hundred and fifty specimens from South America I find it impossible to segregate more than four subspecies with any degree of certainty and even the lines between these are not too definite.

For example, most of the Amazonian region is occupied by a variable form which averages darker on the back, with more pronounced dark centers to the mantle-feathers, and with more whitish throat than the typical Paraguayan *melancholicus*, but there are very many specimens from this region which are indistinguishable from the southern birds. I have attempted to consider these birds as migrants of *melancholicus*, and it is quite possible that many of them are, truly, migrants from the southern regions; but wherever found, there is intergradation with the darker, whiter-throated birds of the immediate locality and I can find no definite lines of demarcation.

On the other hand, some of the southern birds match the average dark bird from the Amazonian region although they do not reach the extreme development in this direction that is shown by the best-marked examples from the more northern localities.

It is certain that *melancholicus* is at least partially migratory. It is reported as leaving the southern parts of its range about in March

and returning in September. On departure, adults are rather badly worn and faded and young birds are still in juvenal plumage, but, on return, all the individuals are fairly fresh. During the breeding season, abrasion of the plumage gradually increases.

In southeastern Perú, Bolivia, Matto Grosso, and parts of eastern Brazil, there is no certain evidence of northward migration in winter and specimens are at hand collected in these areas at various times through most of the year. The series as a whole shows that a general molt commences in February or March and continues through April, possibly slightly later. June birds are in full, fresh plumage. I have no material suggesting a possible partial molt later in the year, although such evidence is at hand regarding the populations of the Amazonian region.

Here there appear to be two molts each year, although one of them may be only partial and sometimes shows a mere replacement of certain worn feathers. I have been unable to get a very clear picture of the process, due to the fact that the material from different parts of the year has often been collected in different localities where conditions may differ.

Some very curious conditions of plumage are observable. Not infrequently the plumage shows mixed fresh and worn feathers without positive proof of an active molt. A July male from the lower Rio Negro has most of the remiges fairly fresh, but the tertials and body plumage are quite ragged. A January female from the same region has the remiges and body plumage generally badly worn, but the tertials are quite fresh; a January male is similar to the female but has started molt on body and wings. Some specimens show the outer few primaries badly worn and the remainder less worn but not fresh. Similarly, the two median rectrices may be replaced independently of the remaining tail-feathers.

In general, the principal molt occurs from February to July, sometimes as late as August, although it is probable that many of the later molting specimens are completing the post-juvenal molt, having reached a stage when the determination of age is impossible. There is some replacement of plumage in October, November, and December but the greatest part of the specimens at hand with dates as late as this are variously fresh or worn.

The young birds apparently molt a little later than the adults and the presence of young specimens of obviously different ages, though with closely approximate dates of collection, suggests the possibility of two broods or of considerable variation in nesting dates. In any case, there

are at hand two molting immature birds collected in April, two in May, two in July, two in August, two in October, two in November, and one in December.

Some young birds are like the average northern adults in the possession of a strongly whitish throat and markedly dark subterminal areas on the back-feathers, but many other young are as dull and unmarked on the back and with as dull throats as typical *melancholicus*. Some in the process of molt are obtaining the darker characters of adults.

The determination of the birds from the region including the Rio Tapajoz, the Xingú, the Tocantins, and the Pará district is largely a matter of individual preference. When compared with a series of Bahian specimens, the lower Amazonian birds, with few exceptions, are somewhat darker and larger; when the same specimens are compared with typical *melancholicus* they average paler and smaller.

Several specimens from the upper Rio Madeira region also seem to be closer to *despotes* than to *melancholicus* either of the lower Madeira or of the Matto Grosso plateau. They are small and pale birds. On the other hand, a skin from Utiarity, Rio Papagaio, is nearer to *melancholicus*. A larger series from this general region will be necessary to determine the exact nature of the resident form.

North of the Amazon, a somewhat similar condition prevails. Specimens from Faro and from French and Dutch Guiana appear to be slightly closer to *despotes* than to *melancholicus* although certain individuals could be referred to *melancholicus*. A small number of the specimens from the Negro and Cassiquiare regions vary in the other direction and could be referred to *despotes* although most of the individuals are *melancholicus*. There is, in fact, no sharp dividing line but rather a wide area of intergradation in which the evidence of single specimens may prove misleading.

In general, therefore, while there appears to be some evidence on which to suspect the existence of a separable form in the Amazon Valley, with a possible range extending from northeastern Perú and extreme eastern Ecuador to southwestern Venezuela, British Guiana, and the Rio Negro, north of the Amazon, and to the region of Villa Bella Imperatríz on the south bank of that river, it is impossible to present trenchant characters for its separation.

The records from Perú which appear to belong to *melancholicus* are from Lake Titicaca, Huaynapata, Cosñipata, Iquitos, Pebas, and possibly Nauta. Records from Yurimaguas, Chayavitas, and Jeberos are

doubtful and may belong to the Andean form of northern Perú, next to be discussed.

Tyrannus melancholicus obscurus, new subspecies

TYPE from Palambla, Dept. Piura, Perú; altitude 3900–6500 feet. No. 175,451, American Museum of Natural History. Adult male collected September 17, 1922, by Harry Watkins.

DIAGNOSIS.—Similar to *T. m. melancholicus* of Paraguay and adjacent areas, but back darker and much grayer, chest more shaded with grayish, and center of chin and upper throat much whiter; belly often deeper yellow.

RANGE.—Central and western Perú from the Urubamba Valley and the Junín plateau northward through central and western Ecuador to southwestern Colombia (Tumaco).

DESCRIPTION OF TYPE.—Top of head Light Neutral Gray with suggestions of blackish shaft-stripes and with a concealed crest which is Flame Scarlet on the deepest portion, turning to yellow and white on the borders; back with exposed portions of the feathers largely Light Neutral Gray, not sharply defined from the head, with a slight tinge of Yellowish-Olive, stronger on the scapulars; subterminal part of the dorsal feathers brown, sharply defined from the pale gray base; upper tail-coverts brown, with relatively narrow grayish or olive grayish terminal margins, obsolete on the longest coverts. Lores blackish; auriculars dusky on upper portion, pale gray on lower part; malar region and sides of throat Gull Gray; chin and center of throat dull white, slightly tinged with Olive-Buff and slightly grayer toward chest; chest rather narrowly dull Strontian Yellow overlaid with gray on the tips, more broadly on the sides; rest of under parts Strontian Yellow with a shading of Olive Yellow on the lateral parts. Wings dark brown, with indistinct pale outer margins on the primaries, broader and slightly olive-tinted margins on the secondaries, and sharper and whiter borders on the tertials; upper wing-coverts dark brown, with not very conspicuous margins of Smoke Gray; under wing-coverts Citron Yellow with a small brownish patch near the base of the primaries; inner margins of the remiges slightly yellowish; five outer primaries narrowed and emarginate at tips; sixth less noticeably so. Tail dark brown with very narrow pale outer margins and tips, the outer margin broader, sharper, and more yellowish on the outermost rectrix; tail forked for a depth of 16 mm. Bill (in dried skin) blackish; feet brownish black. Wing, 123.25 mm.; tail, 101; exposed culmen, 23; culmen from base, 27; tarsus, 19.

REMARKS.—Females similar but with shorter wings and tail and with less obvious emargination at the tips of the outer primaries.

Specimens from the Junín region are not typical *obscurus* but are closer to this form than to any other. They have the throat pattern of *obscurus* and a somewhat grayish tone on the back (matched by various *obscurus*) but the general tone of coloration is slightly paler on head, back, and under parts, not in the direction of *melancholicus*.

I have not re-examined the specimens from the Huánuco region which I formerly (1930, Field Mus. Nat. Hist. Publ., Zool. Ser., XVII, p. 370) referred to *melancholicus*, but a specimen now at hand from Chu-

churras is like the general Junín series as are three birds from Nuevo Loreto.

Examples from the more arid portions of the west coast of Perú, from Pisco north to the Department of Libertad, are inclined to be a little paler and duller above and below, and to have the bill wider and sometimes longer than in more typical examples of *obscurus* from the more humid areas. Even the specimens from the neighborhood of Cajabamba, at a very high elevation for the species though in a dry region, show this variation while skins from Seques, in a more humid region some distance west of the main chain of the Western Andes, agree with the average of the dark form. It is possible that some subspecific distinction could be made on this basis, but further field studies would be desirable before a formal proposal to effect such separation. Specimens from Palambla, at 4000 to 6000 feet elevation, are among the darkest and grayest of the entire series but they have bills hardly less broad than the specimens from the arid coast. The Arid Tropical Zone at Palambla was found by Watkins, the collector of our Palambla birds, to reach its upper limit at some 2000 feet. If there is a subspecific distinction here as suggested, the large-billed, paler form should be found below Palambla at the lower elevation. In any case, the distinction is not sharply maintained in the series at hand and some of the paler birds have small bills while some darker ones have large bills, as mentioned for Palambla specimens.

Specimens from Ecuador, excepting the examples of *amazonus* from the Napo Valley, also vary somewhat from typical *obscurus*, having a tendency toward the paler *chloronotus* of Central America. The throat is slightly clearer whitish than in Peruvian specimens, the top of the head is a little paler gray, and the back is, on average, a little lighter though it is still quite grayish. Skins from Tumaco, Ricaurte, and the Andes west of Popayan, Colombia, apparently should be referred here also. The rest of the Colombian birds are closer to *chloronotus*, discussed hereunder.

Records which presumably belong to *obscurus* are from Bellavista, Tabaconas, Huayabamba (nesting in February), Tumbez, Santa Lucia, Tambillo, Corral, Chirimoto, Huambo, Paucal, Hacienda Limón, Chachapoyas, Rioja, Moyobamba, Menocucho, Chorrillos, Lima, Pacasmayo, Tarapoto, Chosica, Santa Eulalia, Huánuco, Vista Alegre, Chinchao, Huachipa, Chanchamayo, Monterico, Paltaypampa, San Ramón, La Merced, Huiro, Idma, Río Cosireni, and San Miguel Bridge. Yurimaguas, Jeberos, and Chayavitas are doubtful, possibly belonging to *melancholicus*.

Tyrannus melancholicus chloronotus Berlepsch

Tyrannus chloronotus Berlepsch, 1907, Ornis, XIV, p. 474—Temax, Yucatan.

There seem to be no satisfactory lines of demarcation among the birds from the greater part of Venezuela (excluding the Duida region), Trinidad, Tobago, and Grenada, the Santa Marta region, most of Colombia, and most of Central America. Birds from Panamá average somewhat darker, and Santa Marta specimens paler, than the general average, but without very clear distinctions. The entire series is distinguishable from the birds from almost all other parts of South America by their average smaller size and pale coloration, most resembling the Bahian form, *despotes*, but averaging even paler than that subspecies. The throat is very whitish, with the sides of the area only lightly shaded with pale gray, and the top of the head is clear, light gray; the back is pale green with considerable gray at the tips of many of the feathers, the gray being of a pale tint like the color of the top of the head.

Birds from the north coast of Colombia are quite typical, but those from most other parts of this country average slightly larger and slightly darker on the back although they do not approach either *obscurus* or *melancholicus* close enough to suggest inclusion in either of those forms instead of *chloronotus*. Specimens from the extreme southwestern corner of Colombia are, perhaps, best included in *obscurus* as I have treated them, and some of the specimens from the eastern slope of the eastern Andes have a tendency toward *melancholicus* without quite reaching a positive position in the series of that form. It would be possible to erect a Colombian subspecies for these intermediates, most of which can be distinguished from typical *chloronotus*, but there are too many examples of *chloronotus* which duplicate the Colombian birds to make this desirable. On the whole, therefore, it seems best to extend the range of *chloronotus* to include all of Colombia except the southwest corner while keeping in mind the tendency toward average larger size and average darker mantle of the birds from the Colombian Andes.

Two males from Ciudad Bolívar are very close to *melancholicus* in distinction from other typical *chloronotus* from the same locality. I have little doubt that they are migrant *melancholicus* but they may be only unusual extremes of *chloronotus* or intergrades with *melancholicus* at a point which is near the junction of the ranges of these two forms. For the present, therefore, I have included them with *chloronotus*.

Specimens Examined

T. m. melancholicus.—Paraguay: 3 ♂, 2 ♀. Uruguay: 1 ♂. Argentina: 6 ♂. 5 ♀. Bolivia: 9 ♂, 7 ♀, 1 (?). Brazil: Estado Rio de Janeiro, 4 ♂, 2 ♀;

São Paulo, 5 ♂, 2 ♀; Paraná, 4 ♂, 1 ♀, 1 (?); Espirito Santo, 3 ♂; Rio Grande do Sul, 6 ♂, 3 ♀, 2 (?); Matto Grosso, 10 ♂, 6 ♀; Rio Amazonas, Villa Bella Imperatríz, 5 ♂, 4 ♀; Rio Madeira, Borba, 8 ♂, 3 ♀, 1 (?); Igarapé Auará, 3 ♂; Rosarinho, 4 ♂, 4 ♀; Santo Antonio de Guajará, 5 ♂, 6 ♀; Teffé, 12 ♂, 9 ♀; Rio Negro, Manaos, 1 ♂; Flores, 1 (?); Campos Salles, 5 ♂, 9 ♀; Igarapé Cacao Pereira, 11 ♂, 10 ♀, 2 (?); Yavanari, 3 ♂, 1 ♀; Santa Maria, 1 ♂, 3 ♀; Tatú, 1 ♂, 2 ♀; Santa Isabel, 1 ♂; Tinahy, 1 ♂; Yucabí, 4 ♂, 2 ♀; Tabocal, 2 ♂, 5 ♀; Muirapinima, 2 ♂, 1 ♀; Rio Uaupés, Tahuapunto, 1 ♂, 2 ♀; Ianarete, 2 ♂; Rio Surumú, Frechal, 1 ♂; Rio Branco, Ilha Castanhal, 1 ♂, 1 ♀; Caracarahy, 1 ♂. VENEZUELA: Mt. Roraima, Philipp Camp, 1 ♀; Arabupu, 1 ♂; Río Cassiquiare, El Merey, 4 ♂, 5 ♀; Río Huaynia, 2 ♂, 1 ♀; terrain between the Huaynia and the Cassiquiare, 1 ♂, 2 ♀; Río Orinoco, Lalaja, 1 ♂; Esmeralda, 7 ♂, 4 ♀; Mt. Duida, Savana Grande, 5 ♂, 3 ♀; Valle de los Monos, 2 ♂, 2 ♀; Campamento del Medio, 2 ♂, 3 ♀; "Duida," 1 ♂. PERÚ: Puerto Indiana, 11 ♂, 8 ♀; Río Ucayali, Lagarto, 3 ♀; Santa Rosa, 2 ♂; mouth of Río Urubamba, 4 ♂, 1 ♀; Sarayacu, 10 ♂, 3 ♀; Río Tapiche, 1 (?); Río Inambari, 1 ♂, 1 ♀; Río Tavara, 1 ♂; Santo Domingo, 3 ♂, 1 ♀; Astillero, 1 ♂, 1 ♀; Candamo, 1 ♂, 1 ♀; Oconeque, 1 ♀. ECUADOR: Río Suno, above Avila, 2 ♂; mouth of Lagarto Cocha, 1 ♂, 2 ♀; mouth of Río Curaray, 4 ♂, 5 ♀. BRITISH GUIANA: 6 ♂, 3 ♀, 2 (?).

T. m. despotes.—BRAZIL: Bahia, 14 ♂, 4 ♀, 3 (?); Ceará, 2 ♂, 1 ♀; Piauhy, 4 ♂, 3 ♀; Pernambuco, 2 ♂, 1 ♀; Goyaz, 3 ♂, 3 ♀; Maranhão, 8 ♂, 1 (?); Rio Madeira, Calamá, 1 ♀; Porto Velho, 2 ♀; São Lorenzo River, 1 ♂; Pará, Utinga, 1 ♂, 1 ♀; Rio Tocantins, Baião, 2 ♂; Rio Xingú, Porto de Moz, 1 ♂, 1 ♀; Río Tapajoz, Igarapé Brabo, 4 ♂, 4 ♀; Aramanay, 1 ♂, 5 ♀; Limoãl, 1 ♂; Santarem, 1 ♂, 1 ♀, 1 (?); Rio Jamundá, Faro, 6 ♂, 10 ♀. DUTCH GUIANA: 3 ♂, 4 ♀. FRENCH GUIANA: 2 ♂, 2 (?).

T. m. obscurus.—PERÚ: Palambla, 4 ♂ (incl. type), 1 ♀; Huancabamba, 1 ♂, 3 ♀; San Ignacio, 2 ♂, 4 ♀; Perico, 1 ♂, 2 ♀; Cabico, 1 ♂, 1 ♀; Pomará, 1 ♀; Pucará, 2 ♀; Lomo Santo, 2 ♂, 1 ♀; Seques, 2 ♂, 2 ♀; Huarandosa, 1 ♂; Chachapoyas, 1 ♂, 1 ♀; Río Seco, 2 ♂, 3 ♀; Viña, 1 ♂; Malca, 1 ♂; Platanar, 1 ♀; Choquisongo, 1 ♂; Samate, 1 ♂; Pisco, 1 ♂, 2 ♀; Vitarte, 1 ♀; Huacho, 1 ♂, 2 ♀; Huaral, 2 ♂, 3 ♀; Sullana, 1 ♀; Virú, 5 ♂, 1 ♀; Chuchurras, 1 ♂; Utcuyacu, 2 ♂, 2 ♀; La Merced, 1 ♂, 1 ♀; Perené, 1 ♂, 1 ♀; Tulumayo, 3 ♂, 2 ♀, 1 (?); Idma, 1 ♂; Nuevo Loreto, 1 [♂?], [2 ♀?]. ECUADOR: Zamora, 3 ♂, 2 ♀; San Javier, 1 ♂, 1 ♀; Guayaquil, 2 ♂; Chone, 1 ♂, 1 ♀; Paramba, 3 ♂, 1 ♀; Cachabi, 3 ♀; Chimbo, 1 ♂, 1 (?); La Piñas, 1 ♂; Isla Tembleque, 1 ♂; Cebollal, 1 ♀; Guainche, 1 ♂; Isla Jambeli, 1 ♀; Intag, 1 ♂; Gualea, 2 ♂; Nanegal, 1 ♂; Esmeraldas, 2 ♀; San Domingo, 1 ♂, 1 ♀; Mindo, 2 ♂; Manaví, 1 ♂; Río de Oro, 1 ♂; Bucay, 1 ♂, 1 ♀; Santa Rosa, 1 ♀; Portovelo, 1 ♂; Alamor, 3 ♀; Zaruma, 2 ♂, 1 ♀; Pullango, 1 ♂. COLOMBIA: Cerro Munchique, 1 ♂; Ricaurte, 2 ♂, 2 ♀; Tumaco, 1 ♂, 1 ♀.

T. m. chloronotus.—MEXICO: Quintana Roo, 2 ♂. GUATEMALA: 36. HONDURAS: 1 ♂. NICARAGUA: 4 ♂, 4 ♀. COSTA RICA: 6 ♂, 7 ♀. PANAMÁ: 32 ♂, 16 ♀. COLOMBIA: (Honda, "Bogotá," Bogotá savanna, Andalucia, Santa Elena, Quibdo, Turbaco, Palmira, San José, Cali, San Antonio, Puerto Valdivia, Las Lomitas, Subia, Mambito, Calamar, Cundinamarca, Florida, La Holanda, Noanamá, Barro Blanco, Nóvita, San Augustin, La Sierra, Anolaima, El Roble, Choachi, Río Ginu, Dabeiba, Florencia, Aguadita, La Playa, and Baranquilla), 32 ♂, 24 ♀, 2 (?)

(Santa Marta region), 26 ♂, 16 ♀, 3 (?). VENEZUELA: (San Esteban, Cocallar, San Antonio, Cristóbal Colón, Cotiza, Barquismeto, Santa Ana Valley, Rincon San Antonio, Cumaná, Campos Alegre, Mérida region, Altagracia, La Prición, Suapure, Ciudad Bolívar, Quiribana de Caicara, Maripa, Sacupana, Maipures, "Venezuela"), 30 ♂, 27 ♀, 1 (?). TRINIDAD: 9 ♂, 3 ♀. TOBAGO: 4 ♂, 3 ♀. GRENADA: 1 ♂, 2 ♀, 2 (?).

T. m. occidentalis.—MEXICO: San Blas, Tepic, 1 ♂ (type), 2 ♀, 1 (?); Escuinapa, Sinaloa, 4 ♂, 2 ♀, 1 (?); Juana Gomez River, 1 ♂. GUATEMALA: Ocos, 1 ♀.

Empidonomus aurantio-atro-cristatus aurantio-atro-cristatus (D'Orbigny and Lafresnaye)

T(yrannus) aurantio-atro-cristatus D'ORBIGNY AND LAFRESNAYE, 1837, Mag. Zool., VII, cl. II, 'Syn. Av.,' p. 45—Valle Grande, Bolivia; Paris Mus.

Tyrannus auriflamma BURMEISTER, 1860, Jour. für Orn., VIII, p. 246—Mendoza, Argentina; cotypes in Halle Mus.

Tyrannus inca SCLATER, 1861, P. Z. S. London, p. 383—Bolivia; British Mus.

There are no Peruvian specimens of this species in the collections of The American Museum of Natural History. Field Museum of Natural History has a young male from Rioja and a female from Yurimaguas, which have been courteously lent to me, and there are other records from Jeberos, Huambo, and "Upper Ucayali" [= near Cashiboya],—two specimens from Jeberos but only a single one from each of the other localities. The Huambo specimen is recorded as collected on March 5; judging by Bartlett's itinerary, the Jeberos skins must have been collected in April or May, and the "Upper Ucayali" skin some time between May and August; the Rioja specimen is dated July 5 and the Yurimaguas bird, September 11.

The Rioja and Yurimaguas examples unquestionably belong to typical *aurantio-atro-cristatus* and there is no reason to doubt that the other Peruvian records refer to the same form. Nevertheless, there is a decided hiatus in the range between the Peruvian localities and the nearest points in Bolivia or Brazil from which there are records during the months between September and March.

I have five examples from four localities on the upper Rio Negro and the Uaupés, in Brazil, and from the upper Orinoco, in Venezuela, which are even farther from the heretofore accepted range of typical *aurantio-atro-cristatus* and represent a new and unexpected extension of distribution of that form to which the specimens undoubtedly belong. The five birds were taken in March, July, August, and September.

Thirty-one specimens from Bolivia, Matto Grosso, Argentina, and Paraguay bear dates between October and February; two others from Bolivia were taken in March and one was obtained in April; one ad-

ditional Matto Grosso skin was collected in August. It is not unlikely that the form is resident in Bolivia and Matto Grosso, but it appears to be absent from at least parts of its breeding range during the southern winter. Wetmore (1926, Bull. U. S. Nat. Mus., 133, p. 337) has recorded it as such in the southern part of its range, and gives inclusive dates of September 15 to February 17 during which time it was found in Paraguay, Uruguay, and Argentina. The dates for the upper Rio Negro and vicinity represent the remaining portion of the year, with very slight overlapping.

It seems fairly obvious, therefore, that the five northern specimens are winter visitants which probably came from Argentina, Bolivia, Paraguay, or Uruguay, and the Peruvian records appear to represent similar migrants from the south.

Of the five birds in hand from the far north, the March specimen is in somewhat worn juvenal plumage, just beginning molt; the July and August skins are in full molt; one September bird has nearly completed its molt and the other September specimen is in full, fresh plumage.

The Rioja bird is a young male in early post-juvenal molt, only a little more advanced than a March bird from the Orinoco. The Yurimaguas female is, I judge, in its first adult dress, with molt all but complete, and quite comparable to a September skin from the Rio Negro.

Specimens Examined

E. a. aurantio-atro-cristatus.—Bolivia: "Campos forest," Prov. Sara, 1 ♂, 5 ♀; Chilon, Santa Cruz, 1 ♂, 2 ♀. Brazil: Cuyabá, 1 ♂; Chapada, 3 ♂, 2 ♀; Rio Negro, Yucabí, 2 ♂; San Gabriel, 1 ♀; Rio Uaupés, Tahuapunto, 1 ♂. Venezuela: Río Orinoco, mouth of Río Ocamo, 1 ♂. Paraguay: Fort Wheeler, 1 ♀; Colonia Risso, 1 ♂. Argentina: Tucuman, 1 ♀; Tapia, 2 ♂; Barracas al Sud, 1 ♀; La Soledad, 1 ♂; Perico, Jujuy, 1 ♂; Embarcación, 3 ♂; Rosario de Lerma, 4 ♂, 2 ♀; Mocovi, Chaco, 3 ♂. Perú: Rioja, 1 ♂[1]; Yurimaguas, 1 ♀[1].

E. a. pallidiventris.—Brazil: Rio Tapajoz, Santarem, 2 ♂; Maranhão, São Luiz, 1 ♂; São João dos Patos, 2 ♂, 1 ♀; Parnahyba, south of Balsa River, 1 ♂; Ilha São Luiz, Anil, 1 ♂; Piauhy, Bello Horizonte, 1 ♂, 1 ♀.

Empidonomus varius varius (Vieillot)

Muscicapa varia Vieillot, 1818, 'Nouv. Dict. Hist. Nat.,' nouv. éd., XXI, p. 458—based on Azara, No. 187; Paraguay.

The present species is in much the same status in Perú as its congener, *E. aurantio-atro-cristatus.* There is a specimen from Pebas in the British Museum; one from Tarapoto (April 5) in the Berlepsch Collection, Frankfort Museum; and a record by Bartlett from the "Upper Ucayali"

[1] Specimens in Field Museum of Natural History, Chicago.

[= near Cashiboya], a bird probably collected between May and August, the present repository of which I do not know. Hellmayr has examined the Tarapoto specimen and includes it in *E. v. rufinus*, but there is great probability that all the Peruvian references should be referred to typical *varius*. The nearest point in the range of *rufinus* is on the Rio Madeira, Brazil, and there are no records between the Madeira and Perú. On the other hand, there is some evidence to show that *varius*, like *aurantio-atrocristatus*, is migratory from the southern part of its range in the South Temperate Zone winter, reaching localities far to the northward and quite possibly entering Perú at that season though probably in very small numbers. A series of Peruvian birds would be necessary to determine the full status of the records from this country.

Thirty-one examples from various localities on the Orinoco, the Cassiquiare, the Negro, French and Dutch Guiana, "Bogotá," and adjoining areas, are dark birds, of maximum size, and with the breast and sides, and often the flanks and sides of the belly, quite broadly and heavily striped with brown. Specimens from part of this region have been presumed to represent the form described by Todd as *septentrionalis*. I am unable to distinguish them from thirty-eight skins of typical *varius* from Argentina, Paraguay, eastern Bolivia, and the states of Matto Grosso, São Paulo, Rio de Janeiro, Rio Grande do Sul, and Minas Geraës, Brazil. The thirty-one specimens from the north (except two "Bogotá" skins) are labeled as collected between the months of March and September, most of them between April and August, while the southern birds are dated from late September to February. In addition, thirteen specimens from the lower Rio Madeira, the Rio Tapajoz, and the lower Rio Negro seem also to belong to the typical form in distinction from *rufinus* which is represented by many specimens at hand from the same general region. These thirteen examples are dated March, May, June, and August. In the series from certain nearby localities where collections were made only between October and February (the Rio Tocantins, Faro, Rio Andirá, etc.) only *rufinus* is present.

There is some evidence of the occurrence of both forms at other localities. Five birds from "Celci Puede" [=Salsipuede], Cumaná, Venezuela, belong to *rufinus;* one bird from the same locality is *varius*. A female from Ciudad Bolívar and a male from Agua Salada de Ciudad Bolívar are *rufinus*, but five other Ciudad Bolívar specimens are *varius*. A British Guiana skin is *rufinus* but a "Cayenne" specimen and a Dutch Guiana bird are *varius*. Other conflicts of the same sort are to be seen.

The species has been recorded as nesting in British Guiana and it is

quite probable that *rufinus* does breed in that country and possibly farther to the northwest in Venezuela. It also seems apparent that *varius* enters the same region in the non-breeding season.

I have no topotypes of *septentrionalis* and hence cannot assert that this form is synonymous with *varius* although the type was collected in May and could have been a migrant from the south. The range of variation in the series at hand from the north is coterminous with that of the specimens from Paraguay, Argentina, and southern Brazil, with the darkest northern specimen no darker than the extreme from the south. Possibly *septentrionalis* exists as a still darker form restricted to the Carabobo region of Venezuela.

The blackest-backed specimen of all is an August bird from near Manaos which is in great contrast to a series of *rufinus* from the same region.

The migrants of this form reach their wintering grounds in March in quite worn condition. Some April specimens show the beginnings of molt; most May specimens are in molt and June examples are completing the change. July birds are fairly fresh and there is a certain amount of abrasion through August and September so that the birds arriving in the south in September may be already slightly worn, though much fresher than the January and February examples.

I can find little difference in size between *varius* and *rufinus*. Measurements of both (using specimens of *varius* only from Paraguay, Argentina, and the states of Matto Grosso, Rio de Janeiro, São Paulo, Minas Geraës, and Rio Grande do Sul, Brazil; and of *rufinus* only from the states of Maranhão, Ceará, Pernambuco, and Bahia), the following figures were obtained. Males of *varius:* wing, 96–104 mm. (av., 99.8); tail, 77–85 (av., 80.6). Females of *varius:* wing, 90–101 (av., 96.4); tail, 72–80 (av., 77.5). Males of *rufinus:* wing, 97–100.5 (av., 98.1); tail, 77–84.5 (av., 81.5). Females of *rufinus:* wing, 91–95.5 (av., 93.3); tail, 73.5–82 (av., 76.6).

The preceding evidence leads me to the conclusion that there is greater probability of the migration of *varius* to Perú than of the interrupted extension of the range of *rufinus* to this country. For the present, therefore, I am including the Peruvian records under the typical form.

Specimens Examined

E. v. varius.—Paraguay: Trinidad, 1 ♂, 1 ♀; east of Caaguassú, 3 ♂. Argentina: Salta, Embarcación, 1 ♂; Tucumán, 1 ♂; Tafi Viejo, 1 ♂. Bolivia: Province of Sara, 1 ♀. Brazil: Matto Grosso, Chapada, 6 ♂, 5 ♀, 1 (?); Urucum, 2 ♂, 1 ♀; Belvedere de Urucum, 1 ♂; Rio de Janeiro, Monte Serrat, 2 ♂; São Paulo, São Sebastião, 1 ♂; Fazenda Cayoá, 1 ♂; Ypanema, 1 ♂; Minas Geraës,

Fazenda Emerick, 1 ♂; Rio Grande do Sul, São Pedro, 1 ♂, 1 ♀; São Francisco de Paula, 2 ♀; Nonohay, 1 (?); Paccaria, 1 ♀; Tamandua, 1 ♂.

E. v. varius (migrants ?).—BRAZIL: Rio Tapajoz, Aramanay, 3 ♂, 3 ♀. Igarapé Brabo, 2 ♂, 1 ♀; Rio Madeira, Rosarinho, 3 ♂; Rio Negro, Manaos, 1 ♂; Santa Isabel, 1 ♀; Tabocal, 1 ♂; Rio Uaupés, Ianarete, 1 ♀; Rio Surumú, Frechal, 1 "♂" = ♀. FRENCH GUIANA: "Cayenne," 1 [♀]. DUTCH GUIANA: near Paramaribo, 1 ♀. VENEZUELA: La Florida, Cumanacoa, 1 ♂; "Celci Puede (= Salsipuede), 1 ♀; Caicara, 3 ♂, 2 ♀; Quiribana de Caicara, 1 ♀; Ciudad Bolívar, 2 ♂, 3 ♀; Río Cassiquiare, mouth of Río Ocamo, 3 ♂, 1 ♀; opposite mouth of Ocamo, 1 ♂; junction of Río Huaynia and Río Cassiquiare, 1 ♂; terrain between Huaynia and Cassiquiare, 2 ♀. COLOMBIA: "Bogotá," 2 [♀].

E. v. rufinus.—BRAZIL: Bahia (no locality), 2 ♂, 3 ♀ (incl. 1 ♂, 1 ♀, cotypes of "*Muscipeta ruficauda* Wied"); Bahia, 2 ♀, 1 (?); Jiquy, 2 ♂; Cajazeiras, 2 ♂; Ceará, Joazeiro, 2 ♂; São Pedro do Cariry, 1 ♂; Pernambuco, Bello Jardin, 2 ♂, 2 ♀; Rio Branco, 1 ♀; Aguas Pretas, 1 ♀; Maranhão, Anil, 4 ♂, 1 ♀; São João dos Patos, 1 ♀; Codó, 1 ♂, 1 ♀; Miritiba, 1 ♂, 1 ♀; São José, Ilha São Luiz, 1 ♂; Pará, Utinga, 2 ♂; Prata, 1 ♀; Igarapé Assú, 1 ♂; Flor do Prado, 1 ♂; Rio Tocantins, Mocajuba, 3 ♂, 5 ♀; Baião, 1 ♂, 1 ♀; Rio Tapajoz, Aramanay, 2 ♂, 1 ♀; Igarapé Brabo, 4 ♂, 2 ♀; Santarem, 2 ♂; Villa Bella Imperatríz, Boca R. Andirá, 2 ♂, 1 ♀; Lago Andirá, 1 ♂, 1 ♀; Serra de Parintins, 1 ♂; Santa Clara, 1 ♀; Rio Madeira, Borba, 1 ♂; Igarapé Auará, 1 ♂; Porto Velho, 1 ♂; Rio Jamundá, Faro, Maracaná, 11 ♂, 10 ♀; Castanhal, 1 ♂; Rio Negro, Manaos, Campos Salles, 2 ♂, 1 ♀; Hacienda Rio Negro, 5 ♂, 2 ♀; Muirapinima, 1 ♂, 1 ♀; Igarapé Cacao Pereira, 6 ♂, 3 ♀. BRITISH GUIANA: Annai, 1 ♂. VENEZUELA: "Celci Puede" (= Salsipuede), 1 ♂, 3 ♀; Ciudad Bolívar, 1 ♀; Agua Salada de Ciudad Bolívar, 1 ♂; Nericagua, 1 ♂, 1 ♀; Quiribana de Caicara, 1 ♂.

Sirystes sibilator albocinereus Sclater and Salvin

Sirystes albocinereus SCLATER AND SALVIN, 1880, P. Z. S. London, p. 156—Bogotá; British Mus.

I have no Peruvian material of this species although *albocinereus* has been recorded from Santa Cruz, Iquitos, "Upper Ucayali" [= Cashiboya], and "Upper Amazons" [=? near Pebas].

The various forms of the species appear to be comparatively rare wherever found and there is yet much to be learned of their distribution. Among the specimens at hand are several which are of particular interest in view of the extensions of range which they demonstrate.

SPECIMENS EXAMINED

S. s. subcanescens.—BRAZIL: Rio Tocantins, Baião, Pedral, 1 ♂, 1 (?); Rio Tapajoz, Limoãl, 1 ♀.

S. s. albogriseus.—PANAMÁ: Tacarcuna, 1 ♂, 1 ♀; Tapalisa, 1 ♂, 1 ♀; Boca de Cupe, 1 ♀; [Lion Hill], 1 (?) (type).

S. s. albocinereus.—COLOMBIA: Barrigon, 1 ♂.

S s. antimastus.—BRAZIL: Matto Grosso, Chapada, 4 ♂, 2 ♀, 2 (?).

S. s. sibilator.—BRAZIL: "Rio Janeiro," 2 (?); Paraná, Roca Nova, 1 ♂, 1 ♀;

Castro, 1 ♀; Goyaz, Fazenda Esperança, 1 ♂; São Paulo, Fazenda Cayoá, 1 ♀; Victoria, 1 ♂, 3 ♀. PARAGUAY: Sapucay, 1 (?). ARGENTINA: Misiones, Puerto Segundo, 1 ♂, 1 ♀; Santa Ana, 1 ♂. "ECUADOR" (errore !=?); 1 (?).

Knipolegus poecilurus peruanus (Berlepsch and Stolzmann)

Empidochanes poecilurus peruanus BERLEPSCH AND STOLZMANN, 1896, P. Z. S. London, p. 366—Garita del Sol, Perú; ♀; Warsaw Mus.

Peruvian birds for the most part are quite recognizably distinct from Colombian ones, although I have not seen topotypical specimens from the Bogotá region. The Peruvian specimens are decidedly deeper rufous on the under parts than Colombian birds in comparable plumage although worn examples of *peruanus* may have faded to a tone quite comparable to that of fresh *poecilurus* which, in worn condition, is still paler and very similar to *venezuelanus* or even to exceptionally deeply colored examples of *salvini*. The breast in *peruanus* is less strongly gray than in *poecilurus*.

On the upper parts there are less well-defined differences. Very fresh *peruanus* has a faint suggestion of brownish olive on the back in most examples I have seen; *poecilurus* is clearer gray; *venezuelanus* apparently lighter gray (although the type and one additional example are rather worn); and *salvini* darker gray. These characteristics, however, may be found inconstant in larger series.

It would seem that various workers have believed that the sexes of the present species were alike, but if the sexing of the material at hand is correct, with one exception, there is a recognizable difference between them. Adult males of the various forms have the two wing-bars relatively obscure, dull and grayish, without very sharp definition, although always apparent. Furthermore, the upper tail-coverts are relatively grayish like the back, though often with some brownish or dull rufescent edges. Adult females have the wing-bars more prominent, either more whitish or slightly rufescent and the upper tail-coverts are inclined to be more definitely tinged with rufous. The back is usually rather paler than in the average male of the subspecies concerned but the under parts (except in *salvini*) seem to average darker. Young birds of both sexes are like the females except that the wing-bars are still broader and definitely cinnamomeous or deep buffy; the under parts are somewhat variable. The tail, however, shows a decided reduction in the extent of the black markings, in which respect both sexes of adults are alike. Young *salvini* thus may have the tail marked rather exactly as in adult *poecilurus* and *peruanus* while the young of these forms may have the blackish markings

reduced to a minimum, a character which erroneously formed the basis for the original separation of *peruanus* from *poecilurus*.

I have mentioned that faded specimens of one form may resemble fresher examples of a paler form. Thus the very worn type of "*Knipolegus columbianus*" is very like the type of *E. p. venezuelanus*, which is also somewhat worn, although the latter is rather paler on the back. One of two specimens of *salvini* from Mt. Duida, in very fresh condition, is as deeply colored below but is still darker on the back. Due to this variation, I am in agreement with Chapman (1931, Bull. Amer. Mus. Nat. Hist. LXIII, p. 100) that a specimen from the Rio Içanna, Brazil, assigned by Hellmayr to his *venezuelanus*, probably belongs to *salvini*.

A surprising specimen is one from eastern Bolivia, in worn condition, which is exceedingly like the type of *venezuelanus*. Fresh material from this region will be necessary to determine the identity of the Bolivian bird which is hardly likely to belong to the north-Venezuelan form. Assignment to *peruanus* is not justified by the appearance of this single example which is much paler below than any specimen of the Peruvian form even in quite worn condition.

Ecuadorian birds are intermediate between *peruanus* and *poecilurus* but are rather closer to *peruanus*. There is a slight difference in size between these two forms in which respect, as in general color, the Ecuadorian birds are closer to the Peruvian ones. Colombian males have the wing 78.5 to 79 mm.; Peruvian males, 72–76; Ecuadorian males, 73 and 75.5. Females, 75, 68.5–74, and 70.5–73, respectively.

It is difficult to find adequate characters to entitle this species to unique generic distinction (*Eumyiobius* Brodkorb, 1937, Proc. Biol. Soc. Wash., L, p. 1), although it is properly separable from *Cnemotriccus* to which (under that name or *Empidochanes*) it has been referred by most authors, though sometimes with an expressed doubt of proper affiliation. Its closest relative is *Knipolegus*, as was disclosed by Chapman when he redescribed *poecilurus* as "*Knipolegus columbianus*."

The tail-pattern of *poecilurus* is shown by the females of various species of *Knipolegus;* the general proportions of wing and tail are similar in some species, and the shape of the bill, with its rounded and moderately well-exposed nostrils may be matched fairly closely. It is true that there is usually a greater sexual difference in the members of *Knipolegus* but not always, although the females tend to resemble the dark males while in *poecilurus* the female style of plumage is adopted by both sexes. In *Knipolegus* the tenth (outermost) primary is usually shorter than the fourth while in *poecilurus* it is between the fourth and fifth in length

(rarely shorter than the fourth; Brodkorb is in error in stating that the tenth equals the second). However, *K. cabanisi* has the wing very similar except that the sixth primary is usually longer than the ninth whereas in *poecilurus* it is usually shorter; *cabanisi* also has somewhat more narrowed primaries, though this feature is not shared by all members of *Knipolegus*. In short, I can find no characters of sufficient value to separate this species from *Knipolegus* to which I believe it should be referred.

I am quite unable to see the relationship connoted by the name *Eumyiobius*.

Peruvian records of *peruanus* are from Tambillo, Charapi, Perico, Chachapoyas, Garita del Sol, Auquimarca, Paltaypampa (Junín), San Miguel Bridge, and Cosñipata.

Specimens Examined

K. p. poecilurus.—Colombia: Coast Range west of Popayan, 1 ♂ (type of *K. columbianus*); La Palma, 1 ♂, 1 ♀; La Candela, 1 ♂; near San Augustin, 1 ♂; Santa Elena, 1 ♀; San Antonio, 1 [♂].

K. p. venezuelanus.—Venezuela: El Escorial, 1 ♂ (type); La Culata, 1 (?).

K. p. salvini.—British Guiana: Roraima, 1 ♂. Venezuela: Philipp Camp, Mt. Roraima, 3 ♂, 2 ♀; Rondon Camp, Mt. Roraima, 1 ♂; Central Camp, Mt. Duida, 1 ♂; Cerros de Savana, Mt. Duida, 1 ♂.

K. p. peruanus.—Perú: Lomo Santo, 1 ♂, 1 ♀; Chaupe, 5 ♂, 1 ♀; Utcuyacu, 2 ♂, 2 ♀; Nuevo Loreto, 2 ♂; Chinchao, 4 ♂[1], 4 ♀[1]. Ecuador: Guayaba, 1 "♂" (= ♀), 1 ♀; Sabanilla, 1 ♀; Zamora, 2 ♂, 1 ♀.

K. p. subsp ?.—Bolivia: "Camp, woods," Prov. del Sara, 1 ♂.

[1] Specimens in Field Museum of Natural History, Chicago.